The Comprehensive Guide to Product Digitization

What it is and how it can help businesses achieve their goals

DIGIMARC

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Introduction

In a recent survey, we asked business decision makers about their digitization processes and plans. While 60% stated that digitizing processes was a big part of their plans, less than half said the same about their products. While 85% said they know the importance of product digitization, only 16% stated that it was a top priority in their digital transformation journey.

We know these businesses likely aren't alone — many may be putting product digitization off, but the benefits of it are too great to ignore. That's why we've compiled this comprehensive guide to product digitization, to give brands across industries a clear-cut understanding of what modern product digitization is and what it means for businesses and consumers.

You'll also learn:

- What a digital twin is and why you need one

- Why a centralized location for your product data is essential

- How product digitization helps brands like yours

- Things to consider before you deploy

As more consumers expect digital experiences from the brands they interact with, delaying product digitization can impede operations and make connecting with consumers more difficult in the future.

With product digitization, brands can see everything about their products and when they can see everything, they can achieve anything.

Why You Must Digitize Your Products for Today's Complex Global Supply Chains

Your brand may not know where the majority of its products are right now. And it's not alone.

This lack of insight poses a significant business problem. Beyond the pandemic-related challenges, supply chains now must answer a consumer population whose preferences and expectations are increasingly complex. Customers want more sustainability, safer products, proof of authenticity and the ability to see where their goods are made or their food is harvested.

In a world where brands have digitized or automated almost every process and byte of data, most of their products still can't provide a digital footprint – or much information at all – after they leave the loading dock. And that's why product digitization can become a brand's best friend.

"For at least three decades, companies have invested in new software and systems to get through the digital transformation process," says Ken Sickles, Chief Product Officer at Digimarc. *"But the things those companies were created to sell – their products – haven't been part of that digital transformation."*

What is product digitization?

In the simplest terms, product digitization means giving physical products and packaging (such as a bottle of lotion or baby formula) a digital life. This digital life allows products to interact with the digital realm and provide valuable data to the brand.

We're all used to living in a digital world these days. We know when our grocery delivery driver leaves the store and when they'll arrive at our house. But the products we buy and use are, for the most part, not included in that digital ecosystem.

A clamshell of berries, for example, can't interact with you or your smart devices, tell you whether it's been recalled, and can't communicate with sorting machines about what to do when it reaches a recycling center. But digitized products can communicate with the world around them.

They can inform machines how they should be handled, as in recycling centers, or give the end customer important information such as installation and usage instructions.

Top uses for product digitization

Giving formerly analog products this ability to communicate with a digital world has powerful benefits throughout the supply chain. In the case of a clamshell of berries, digitization allows brands to track:

- Where the contents were picked
- When the contents were picked
- Whether the contents are safe to eat
- Which food product it contained and which kind of plastic it's made from, so recycling sortation machines know how to process it

That means you have information about the product throughout the supply chain – before it leaves your possession to when it is recycled. In practical terms, that information opens a world of possibilities for making your supply chain more efficient. You can see, for example, how long it took for those berries to get from the farm, to the store, to the customer, and to recycling. By better understanding the duration at each stage, you can find ways to optimize the journey, processes, and packaging.

Product digitization solves supply chain challenges

Adding your products to that digital mix is crucial for completing your digital transformation. After all, if you don't know where your products are, the millions of dollars you've invested in supply chain management software isn't going to deliver as much value as it could.

By adding digital watermarks or serialized QR codes to your products, connected to a cloud-based record of their journey and interactions, you can see where the bottlenecks are in your supply chain. Maybe a particular distribution partner holds your product longer than another. Digitized products allow you to make better, more informed and proactive business decisions. Add value, data, automation and optimizations across your supply chain by digitizing your products today.

5 Ways Product Digitization Helps Brands Like Yours

At its core, product digitization is about giving physical products a digital life. This digital life unlocks a wealth of information and lets brands future-proof their business amid growing consumer and marketplace demand for digitization.

Here are five ways product digitization will help your business:

1 Item-level tracking via serialized digital identities for greater precision

2 Anytime, anywhere access to centralized product intelligence, which provides a window into the digital world that digitized products inhabit by recording every interaction

3 Direct, brand-owned communications channel, meeting consumer demands for digital experiences and unlocking all the information consumers desire

4 Automated processes and workflows triggered off real-time product data, allowing products to have intelligent interactions in the digital world

5 Common ecosystem of interoperable applications for new capabilities and collaborating with partners

How Product Digitization Boosted Coca-Cola's Consumer Engagement

Every day, almost 2 billion servings of Coca-Cola's beverages are consumed worldwide. However, this global beverage giant wanted a way to directly connect with their consumers to deliver more tailored mobile experiences. They partnered with Digimarc on a campaign that incentivized consumers to digitally connect with 18 specially designed Coke Zero cans for the German market. Not only were consumers entered to win a soccer jersey, but they were also served a personalized and contextual experience when they scanned — which was provided based on product SKU, time, date, and geolocation. As a result, the campaign exceeded expectations, engagement volume, and conversion rates. Coca-Cola's website traffic also reflected the campaign success, with 10% of traffic coming from users who scanned the products. Afterward, Coca-Cola expanded beyond Germany to create direct digital connections with consumers in 28 markets across Europe and North America.

From CPGs to Food, Your Products Need Digital Twins.

Here's Why.

The term digital twin isn't new in the supply chain space. But until now, it's primarily been used to describe a digital representation or simulation for complex systems and rapid prototyping.

Creating digital twins for your products is a newer application – and an important one. Digital twins can help you produce less waste, shorten time to market, and keep up with customers by gathering constant insights about how they interact with your product.

The benefits don't stop there, which is why product digitization is the next logical step to completing the digital transformation many companies are working toward.

What are digital twins?

Digital twins are intelligent snippets of software that know everything about the product they're attached to.

Every product entered into the Digimarc Illuminate platform, a cloud-based platform for digitizing products and aggregating their interactions, automatically generates a corresponding digital twin. Those digital twins can then use the information you assign them – identification number, URL with more information about the product, or other attributes from an extensible database – to facilitate more interactions and efficient outcomes throughout the product's lifecycle.

This digital representation allows your product to communicate with and participate in the digital world. You can add a watermark, QR code or other digital tag to a physical product so that any device that encounters it can scan the tag and connect to the digital twin in the cloud.

Even better, digital twins can understand context. You can create rules based on geolocation so a customer scanning the code in a store gets product information and a coupon, whereas a buyer scanning the same product at home gets installation and usage instructions. Because they're pieces of software, you can feed digital twins any set of logic-based rules you need them to execute.

"There's almost no limit to what digitized products can do, because the digital twins are incredibly smart and enable automations triggered from real-time product data," says Ken Sickles, Chief Product Officer at Digimarc.

What can you do with digital twins right now?

Digitizing your products finally gives your organization a compelling reason to centralize all its product data.

Instead of your product data living in different silos, digital twins allow that information to follow your product throughout the supply chain. Maybe you start digitizing because you want to give your customers easy access to nutritional information, so you pull that data from one area of your organization. Next, you want to improve the recyclability of your packaging, so you pull information from manufacturing and attach it to the digital twins. And while these two actions may accomplish their intended singular goals, aggregating and overlaying the data from those two sources may lead to additional insights you wouldn't have otherwise had.

These moves come with the powerful benefit of allowing brands to be very surgical with important decisions. For example, imagine recalling only thousands of batch or lot units of a food product from a specific field, as opposed to recalling millions of individual units of that product grown across a larger farm or broader region. The potential for cost savings is tremendous.

Digitization can also help your products get through customs faster. Digital twins can contain any necessary certificates, notifications of compliance with regulations, and digital watermarks to signal they're authentic products. They can even trigger invoices upon acceptance of deliveries.

Trigger automations you didn't know existed with digital twins

Adding your products to your organization's digital world can seem like a monumental task, but it comes with major benefits. You can create automations you never even thought of by creating digital twins, all based on real-time product data. Whether it's automating your ordering, invoicing and payment processes or improving efficiency with better tracking of a product's entire lifecycle, digital twins can take over many of your repetitive tasks.

Because of these benefits they provide throughout the supply chain — from manufacturing through distribution and product security — all the way to recycling, digital twins represent the next big evolution in the supply chain.

How Digital Twins Help Track Your Products

Use Cases

Digital twins are a cornerstone of product digitization, with the capability to help brands with several business needs. There's virtually no limit to the knowledge digital twins can generate and the actions they can automate.

Packaging Visibility:

Keep tabs on your products from the time a digital twin is assigned, so you can see their location and address any supply chain issues.

Verify Product Authenticity:

Your products' authenticity can be verified at any stage with a digital twin, capable of communicating with customs, retailers, or even consumers.

Data Aggregation:

Digital twins offer a wealth of information on a product, and this data can be aggregated in one centralized location for ease and efficiency.

First-party Insights:

Digital twins track more than product location, origin, or status. They also learn consumer behaviors based on scanning habits to help you better target buyers.

Recycling Support:

Digital twins support improved recycling sortation for greater purity and compliance with sustainability regulations.

Enhancing the Effects of Digital Twins

With the Digimarc Illuminate platform, a cloud-based platform for digitizing products and aggregating their interactions, businesses gain deeper insight into their products, consumers, and more from one centralized location. The Digimarc Illuminate platform is software as a service (SaaS) with closed-system security. All product information can be stored in this centralized location, making it easy to get the data you need when you need it. Brands can take this aggregated product data to inform and improve their algorithms and AI, their consumer engagement, and product authenticity. Complete your product digitization journey with the Digimarc Illuminate platform.

Product Digitization is the Future.

Here's How to Get Started.

Product digitization can perform an almost limitless number of tasks throughout your supply chain, from helping spot counterfeit goods to providing specific recycling instructions.

While many organizations have embraced automation in their manufacturing processes and tasks such as real-time order tracking, digitizing their products and packaging has lagged behind. If you're looking to improve your organization's efficiency and return on investment for all of those automation tools, employing digital twins for your products is a crucial next step.

Automation tasks handled by digital twins

Digitizing your products enables a far more granular level of automation, which has some big advantages over system-wide automation tools.

One example is sorting plastic at a recycling facility. Today, humans or robots manually sort plastic waste to – mostly – correctly recycle it. However, digital twins containing the proper information about packaging components can enable automatic identification of materials to dictate sortation with greater accuracy and efficiency.

Another powerful use of digital twins is automating your customer engagement. When a consumer scans the QR code on your product, you can trigger rules-based events such as starting a drip email campaign. Adding logic based on geolocation makes this feature even more useful. If the customer scans the product in the store, it can give them contextually relevant information like product specs or promotional messaging. If they scan it at home or after hours, it can provide installation, usage, or even reordering instructions.

Recyclable!
This item can be recycled in your area!

More Details >
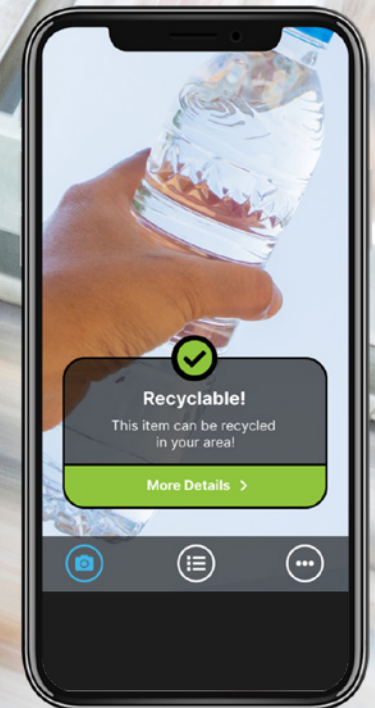
Digital watermarks crack down on counterfeiters

One of the most important uses for product digitization is spotting suspected counterfeit goods. Product diversion and the gray market is a huge issue for supply chains. You have to be sure your products make it to their intended retail markets, and your customers want assurance that the products they purchase actually came from the brands they trust.

In some scenarios, this is a life-or-death situation. Counterfeit pharmaceuticals, vaccines, and baby formula can all have devastating consequences. Even in non-life-threatening situations, consumers want to know the brand-name product they've spent hard-earned money on is the real deal — not a cheap knockoff that may break down tomorrow or be unserviceable.

For many years, anti-counterfeit measures involved physical markers, like holograms or special ink on packaging. The trouble with those forms of security is they're not covert or connected to a software backbone, so they can't learn or evolve over time. Digital twins can learn and act, whether

triggering automations and generating alerts. Imagine being notified if a product is scanned in a region that's not an authorized distribution area.

Digital watermarks are also covert, so they're not easily identifiable by a counterfeiter. A bad actor may not even know the digital watermark is there, let alone be able to reproduce it, making it much harder to fake a product and much easier to vouch for its authenticity.

Why you should start digitizing your products now

The automation capabilities built into digital twins may seem like nice-to-haves, but there may be big costs if you wait too long to digitize your products.

First, consumers and your manufacturing and distribution partners are starting to expect a higher level of automation, including things like predictive reordering based on buying history.

Another reason to not delay product digitization is that you've likely already made a huge investment in automation just to keep up with modern supply chain requirements. Maybe you already have a digital twin of your

manufacturing floor, or you purchased the latest supply chain management software platform. But the thing those pieces revolve around — your products — can't participate in the digital world those tools create, so you're not getting the most out of your investments.

"I don't think a lot of organizations think about how digitized products are the key to unlocking the true value of your digital transformation investments," says Ken Sickles, Chief Product Officer at Digimarc. *"The digital twin gathers all of your disparate sources of product information and becomes a window into the world of your product that you never had before."*

With all of the benefits it offers — and the potential costs of waiting — getting started with product digitization is an important next step for your organization. Choose a challenge you can solve, start small, and build from there for the best chance of success.

5 Keys for Deployment Success

While you may be excited to begin your product digitization journey, here are five key things to keep in mind to ensure your success.

Checklist

1 **Determine your needs:** Determine whether you're seeking to curb counterfeiting, improve recyclability, foster better relationships with consumers, or some combo of all the above. Digitized packaging can address a wide variety of needs. Which is most important to you?

2 **Determine your budget:** What is your budget for product digitization? Don't just view the budget as a cost center, don't forget to account for the likely cost savings that can help offset your investment in digitized products.

3 **Decide on implementation timeline:** What is your ideal timeline to have your products digitized? While your inclination may be to have everything done as soon as humanly possible, it's important to keep in mind that, like any new system, it will take time to implement. Do you have seasonal needs? Are there regulatory requirements on the horizon? Factor these things in when deciding which products, SKUs or brands to embrace first.

4 **Determine the types of tags you need:** There are advantages to leveraging QR codes, digital watermarks, or RFID tags to digitize packaging. Work with a trusted partner who can help guide you to the right choice for your needs.

5 **Schedule a demo:** Turn to a trusted partner like Digimarc that works with brands ranging from Walmart and P&G to Polo and Moët Hennessy to see how quickly you can deploy digitized products.

Click here to schedule a free session.

Product Digitization Done Right

You need actionable data across the entire product lifecycle. See your products through their eyes when you digitize products and packaging with Digimarc. **Get Started.**

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